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Specifics of Educational Process in Architectural Space of Russian and Chinese Universities

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Abstract. Given globalization and internationalization of higher education, and technological and organizational changes in the domain over the last two decades, requirements to the infrastructure, architecture and design of universities have changed drastically. The architecture of each university is viewed as a kind of an intricate system, in which the architecture and the overall style largely define the social networks and the nature of educational interactions. The advancing pace of technological progress in the digital society poses new requirements to the university infrastructure, thus stressing on the need to thoroughly study the impact of the university architecture and infrastructure on the educational process. According to global ratings, Chinese universities are becoming more and more popular with foreign students. The trend is largely triggered by the convenience of the university infrastructure there, which includes modern design, interactive educational premises, comfortable campuses, and restricted access to the areas. At the same time, Russian universities are also witnessing the increasing number of Chinese students. However, foreign students, including those from China, are far from being satisfied with the infrastructure and architecture of Russian universities. Nevertheless, the recent advancements in the Russia-China cooperation in the area of higher education compels Russian universities to enhance the educational infrastructure and adjust it to the needs of Chinese students. However, no meaningful research has been conducted so far in this domain. Within the framework of our research project, we aimed to define the architectural image of Russian and Chinese universities from the eyes of students and come up with the list of key requirements to the infrastructure of a contemporary university. The research aimed to gauge key requirements to the university infrastructure and design specifics of Russian and Chinese universities, and to assess their impact on the nature of interactions in the educational sphere. Questionnaire-based research covered three universities in Yekaterinburg. The overall audience of the project comprised 500 Chinese and 500 Russian students who are either studying or sharing apartments with the Chinese ones. The qualitative part included overt observation over the educational process in Russian and Chinese universities. According to the results, the architectural style of universities is becoming a key factor of educational interactions. A long distance between academic buildings and campuses undermine the intensity and uninterruptedness of the educational process, while the lack of comfortable, modern, and technically advanced premises deteriorates the value of the education for all students and shapes their negative perception of the overall educational process. We developed a typology of architectural and social space of universities. According to students, architectural buildings of 20th century associate with the classical university education, and the fundamental science and knowledge; those of the 1960s-1980s are seen as the aesthetical unappealing and comfortless Soviet-era holdovers, whereas modern architectural buildings are regarded as the centers of innovative activities and science.



The study was able to identify architectural characteristics, develop recommendations to improve the architectural space of Russian and Chinese universities.

1. Introduction

To analyze the architectural space in sociology, it first makes sense to refer to the methodology of structuralism and the study of space and time. Therefore, we use the theory of P. Bourdieu in order to analyze the university infrastructure. Analyzing the space, Pierre Bourdieu applies the multidimensional system of coordinates, in which actors play their roles according to specific rules of the game. Thus, the spatiotemporal axes designate the system of emerging social interactions, which is represented by the educational process in our case [1].

The Russian applied research studies on architectural sociology actualize the matter of giving architectural structures a functional purpose (V.L. Glazychev) [2], and the role of the architect and the user as the actors creating the architectural space (M.B. Vilkovsky) [3], while the architectural space of universities defines key parameters of the educational process (its intensity, richness, and partially its content).

The contemporary German sociology of architecture (S.H. Riggins) conceptualizes the notion of the sociology of a region, the sociology of a city and the sociology of architecture [4]. The German school of thought studies the cultural image of architecture (J. Fischer, H. Delitz) [5], the social community in a specific architectural space, and the social and space system of educational interaction, and forms the culture of students' social relationships, including under the impact of architecture.

The last decade has been witnessing a rapid development and innovativeness of the higher education system in China. The strategic plan *Made in China 2025* focuses on attaining educational and technological superiority over the Western countries and the USA. According to official statistics, the number of Chinese students increases steadily each year (x2.5 times per annum over the last decade) in Russian universities [6]. This compels Russian universities to adjust the educational space to the needs of foreign students, including those from China. Almost all Russian universities lack architectural innovations in the educational space. Therefore, our research focuses on drafting requirements as to how the image of Russian universities should be changed as according to Chinese students.

The lack of innovativeness in the architectural space of Russian universities comes along with the challenges in the social and cultural dialogue between the recipient Russian universities and Chinese students, which becomes evident from Russian and Chinese research studies. The mismatch between the native culture and the recipient culture is a key reason for the challenges encountered by Chinese and Russian students in the educational process. V.V. Malyavin and A.A. Maslov, the domestic China hands, [7] analyze various aspects of the interaction between Russia and China, singling out the worldview, religious and political components. A number of works, including the works of V.V. Kalita [8], N.V. Vinichuk [9], E.B. Popkova [10], S.Yu. Raspertova [11], is dedicated to the issues of enculturation and worldview clashes of Chinese students in Russian universities. Adaptation and socialization in Russian universities is viewed as the main issue in the interaction between the Russians and the Chinese in the works of I.A. Grebennikova [12], O.I. Danilenko, Li Ts., Xu I. [13], S.V. Dementieva [14], and others.

Despite many research studies dedicated to the architectural space, inculturation processes and the teaching of Chinese students in Russian universities, there have been almost no studies conducted on the architectural image of the Russian university and the Chinese university.

2. Methodology

The goal of our research project is to define the architectural image of the Russian university and the Chinese university from the eyes of students.

The tasks included the gauging of key requirements to the university infrastructure and defining designer specifics of Russian and Chinese universities, assessing their impact on the nature of educational interaction.

The questionnaire-based research covered three universities in Yekaterinburg, a meaningful metropolitan city in Russia. The overall audience of the project comprised 500 Chinese students, and 500 Russian students who were either studying or sharing apartments with the Chinese ones. The audience comprised 57% men and 43% women, and was quite homogeneous in terms of the age of respondents, with the majority being aged between 19 and 24. The qualitative part included an overt observation over the educational process in Russian and Chinese universities (four Russian and two Chinese universities). A pre-designed template was used to record specifics of architecture and infrastructure, the speed of travel, availability of educational information, the speed of education-related communication, and the overall architectural image.

To interpret the research data, we applied the comparative and level analytical methodologies, and statistical methods (the method of descriptive statistics and Student's t-test).

Procedure.

Qualitative research: overt observation. A pre-designed template was used to record specifics of architecture and infrastructure, availability of educational information, the speed of education-related communication, and the overall architectural image of Russian and Chinese universities.

Quantitative research: questionnaire survey. The quantitative stage was conducted using a questionnaire survey. The questionnaire used in the study was formulated as a result of the overt observation described above. The questionnaire comprised 56 questions.

3. Results and discussions

Based on the results, the architectural style of universities is becoming a key factor of educational interactions. Thus, the respondents claim that a long distance between academic buildings and campuses undermine the intensity and uninterruptedness of the educational process (78% of responses), while the lack of comfortable, contemporary, and technically advanced premises deteriorates the value of the education for all students (76% of responses) and shapes their negative perception of the educational process (45% of responses).

When entering Russian universities, Chinese students seem to possess quite a moderate informational and analytical component (the awareness of how strongly the architectural space of Russian universities differ from that of the Chinese ones) ($M=24.4$); of the motivational and appraised component ($M=24.7$), which reflects the significance of the university's architecture and infrastructure in the educational process; and of the social and communicative component ($M=25.3$), which reflects educational cooperation in the university space. Quite poor awareness has been identified in relation to those educational conditions in Russian universities which are defined by the architectural specifics of premises ($M=24.1$); this, in its turn, points to a gap between the expectations and the reality of the architectural space of Russian universities which Russian and Chinese students have to experience at the initial stages of studying at Russian universities. In practice, this means that Chinese students entering Russian universities are not aware of the architectural space they are going to live and study in, and the challenges this entails for them. Moreover, first-year Chinese students have no experience in the educational interactions at Russian universities, which hinders their inculturation.

The overt observation in Russian and Chinese universities allowed us to compose the image of a typical university. The observations were confirmed by the poll conducted across students. Thus, we drafted the typology of the architectural and social space of universities. The architectural buildings of the early 20th century shape the image of the classical university education, the fundamental science and knowledge (37% of responses); those of the 1960s-1980s are seen as the aesthetical unappealing and

comfortless Soviet-era holdovers (28% of responses), whereas contemporary architectural buildings are regarded as the centers of innovative activities and science (35% of responses). Therefore, to make the educational interaction successful, the design of premises must be upgraded to meet the demands of the digital society, thus laying the ground for speeding up the transfer and receipt of information in the Russian university space.

The research helped identify architectural specifics of Russian and Chinese universities. According to students, Chinese universities stand out with a contemporary design (65% of responses), convenient location of campuses and academic buildings within a closed territory (87% of responses). The use of many technological novelties (multimedia audiences, easy-to-use digital learning resources, computers and laptops) within the university space make it possible to efficiently organize the learning process (76% of responses). Most of Russian universities, on the other hand, were built during the Soviet period, therefore reflecting the architectural style of the last era, and pose difficulties for organizing innovative educational activities (the lack of technically equipped rooms (68% of responses), the territorial distance between academic buildings and campuses (74% of responses), and the lack of applying digital technologies in the university space (37% of response)).

The identified issues of educational interaction in the architectural space of the Russian universities make it possible to agree with M. B. Vilkovsky in the sense that the functional content directly depends on the architectural composition of the university [3]. Thus, inconvenient, distant buildings hinder the intensity of the educational process and affect negatively the nature of the educational interaction. This is also confirmed by research studies of S.H. Riggins, J. Fischer, H. Delitz [4,5]. Lacking state-of-the-art technically equipped classrooms, students begin to lose interest in the educational process.

We identified factors holding back on the architectural innovation in Russian universities: the lack of Russian-Chinese innovative educational projects (32% of responses), insufficient innovativeness of Russian universities (23% of responses), quite a poor technological infrastructure of Russian universities (24% of respondents), and the management's lack of interest in creating a comfortable dwelling and learning environment for students (23% of responses).

The factors we have identified can be compared to the results of other researchers interesting the matters of fostering educational interactions between Russia and China.

According to our audience, the most significant factor is the lack of Russian-Chinese innovative educational projects (32% of responses). According to the study conducted by Wang Li and I.I. Baranova, we currently have 116 projects for bachelor programs, 2 projects for master's programs, and 5 projects for special courses between Russia and China. According to the provided statistics, most partner projects are carried out with the universities of the Heilongjiang province (84 projects) and the Jilin province (11 projects). Correspondingly, the programs carried out with Chinese partners are best represented in the Western part of the Russian Federation (28 programs). The Central part has 3 programs, the Southern has seen the commencement of 9 programs, the Siberian region carries out 16 programs, and the Far East has 60 [14]. We therefore believe that the geography of innovative educational projects must be extended. The most promising initiatives related to joint educational programs seem to be the increase in the number of education programs in the areas of design, architecture and engineering. The active cooperation of educational establishments must be complemented with academic visits to enable the exchange of experience in crafting design and architecture solutions in the area of organizing and filling up the university space.

Amongst other significant factors, Chinese students pointed out to the scanty information content (23%) and poor technological environment (24%) of Russian universities. Unfortunately, Russia has been cutting investments into the development of universities over the last five years. The OECD Centre for Educational Research and Innovation constantly points to the annual reduction of funding provided to the innovative development of Russian university space over the last five years [15]. We believe that

this factor retards innovations in the architectural space of universities and undermines the quality of the educational process across universities of Russia.

Moreover, respondents mentioned the lack of management's interest in creating a comfortable dwelling and learning environment for students (23% of respondents). This factor is partially confirmed by the study dedicated to the inculturation of Chinese students conducted by O.I. Danilenko, Li Ts., Xu I. [12], E.B. Popkova [9]. We agree with the researchers in the sense that educators and management of universities in Russia are not interested in creating comfortable conditions for Chinese students (inconvenient dormitories, no thought-through routes for delivering the education in the handiest manner). Within the framework of our study, we provide suggestions as to how these and other discrepancies can be solved by optimizing the educational processes within the settled university infrastructure, and how to create new architectural educational spaces.

4. Conclusions

The architectural style of universities is becoming a key factor of educational interactions. A long distance between academic buildings and campuses undermine the intensity and uninterruptedness of the educational process, while the lack of comfortable, modern, and technically advanced premises deteriorates the value of the education for all students and shapes their negative perception of the overall educational process. The findings of our study allowed us to come up with a number of recommendations as to how to improve the image of Russian universities. Amongst others, we recommend promoting innovations in the Russian university space, improve overall conditions in large cities for incoming students, including those from China, relocate universities outside of the cities, and create more comfortable educational conditions for foreign students. We also encourage to increase investments into the innovative development of Russian universities and the Russia-China educational cooperation (including the building of contemporary educational centers, promoting educational technologies) by utilizing various sources (including SCO member countries).

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